



Opportunities for Collaborative Research

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CLEAN AIR MAKE MORE

MCAQD Ongoing Research

- Existing and potential high pollution levels
- Exceptional events, mostly dust storms
- Emerging monitoring technologies
- Emission quantification
- Program and rule effectiveness

April 5, 2017 12:00pm
Maximum PM_{2.5} Concentration: 8.4 μg/m³

You are here



8:25 am, Friday, Christmas Eve, 2010

50.3 $\mu\text{g}/\text{m}^3$; Christmas Day, 82.7 $\mu\text{g}/\text{m}^3$

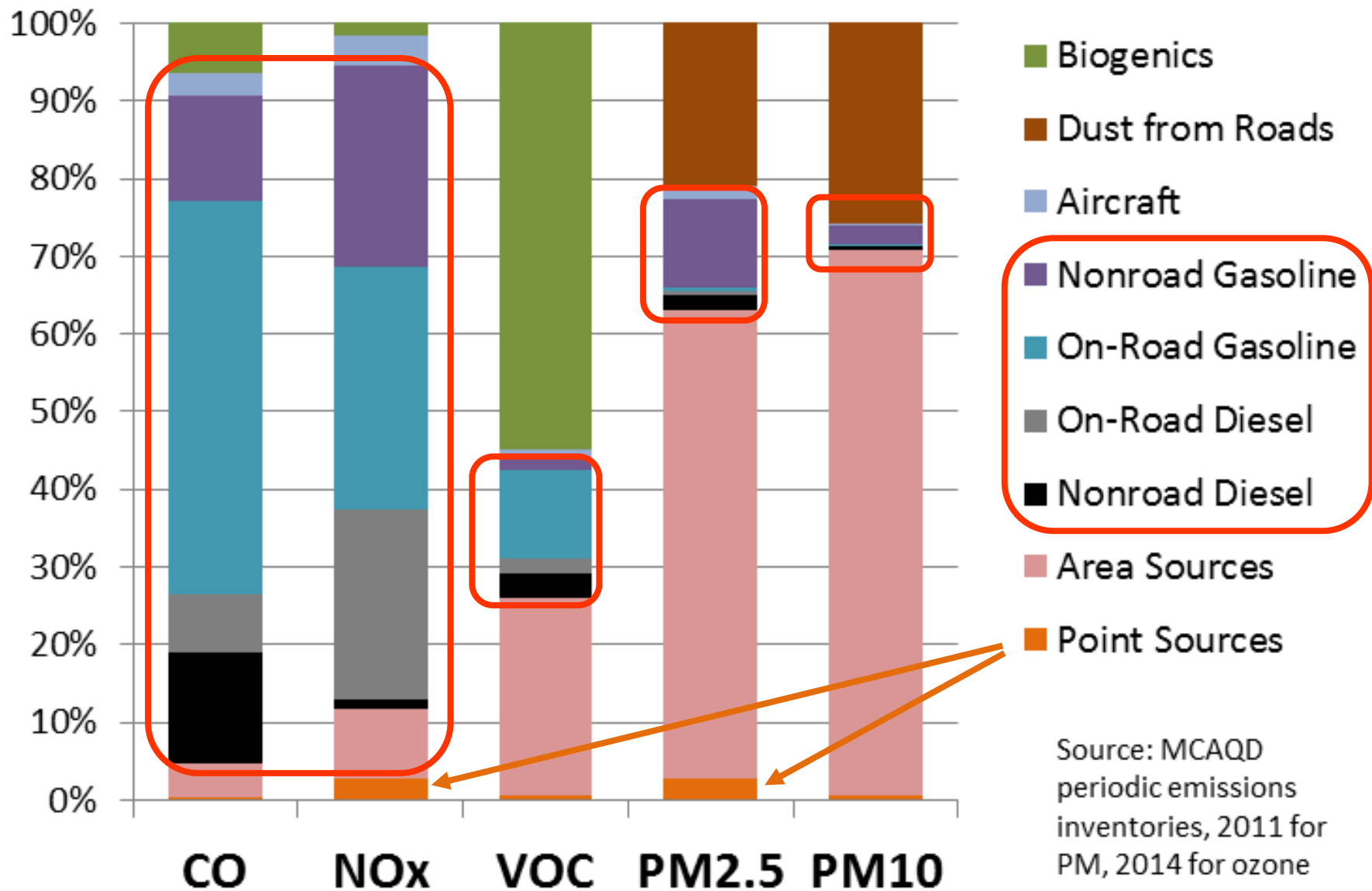
You could be here



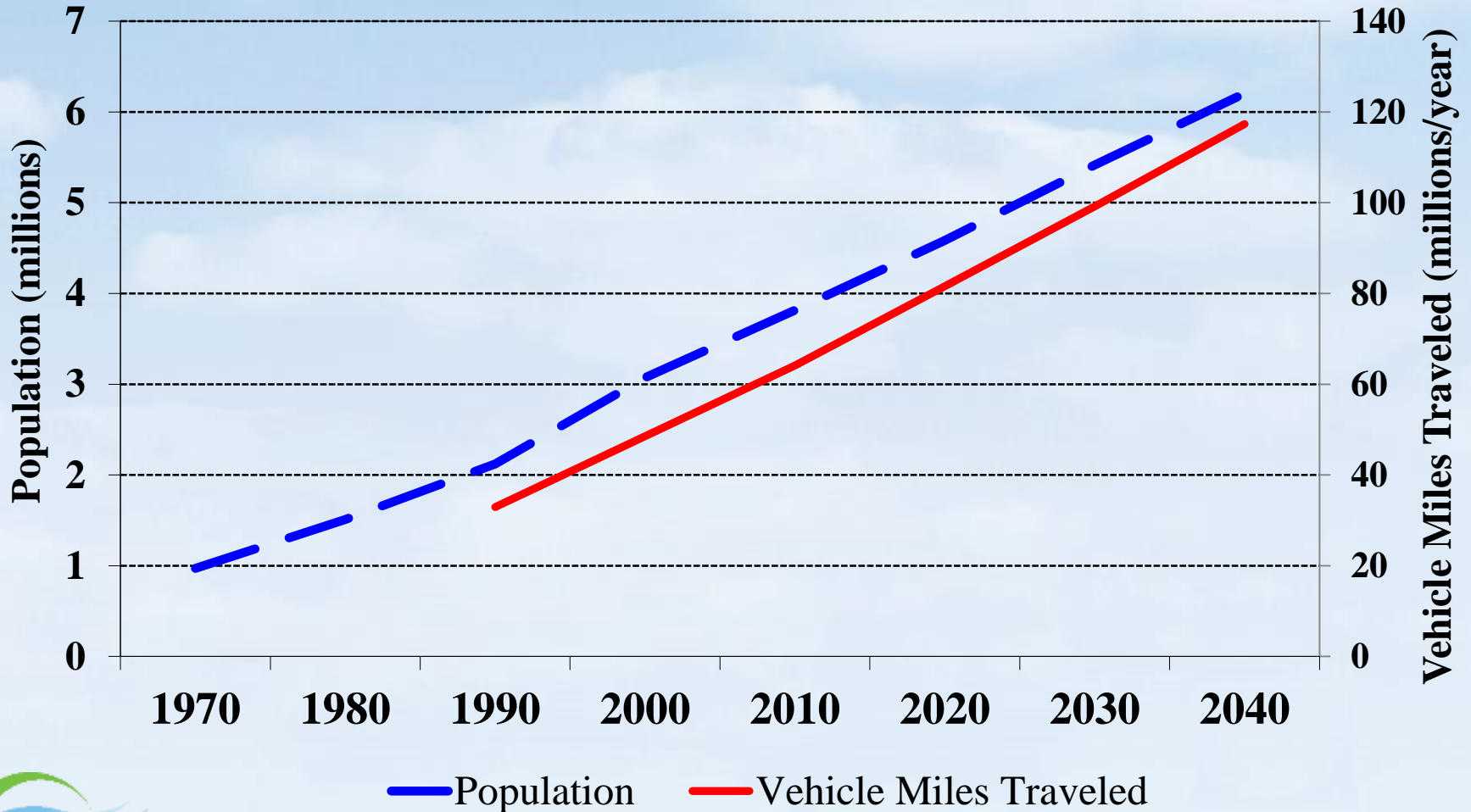
Ozone

- Nonattainment persists
 - Driven in part by more stringent NAAQS
 - Still struggling to attain the 2008 standard
 - All major emission reductions strategies implemented
 - Improvement continues, but progress has slowed; maybe stagnated
 - Additional controls are difficult to identify and implement

Maricopa County Emissions Inventories: Percentages of Emissions by Source Category



MAG Population and Vehicle Miles Traveled Projections, 1970 - 2040



Sources: Wikipedia for population thru 2010; MAG for population projections and VMT

Research Needs

- PM_{2.5} – source hotspots and plume dynamics
- PM₁₀ – climate change impacts and dust storms
- Ozone
 - VOC and/or NO_x limited?
 - Emissions inventory refinement: NO_x, biogenics
 - Geospatial pattern, diurnal cycle and plume evolution
 - Climate change and urban heat island impacts
 - Potential impacts of increasing shade tree cover and new/enhanced control measures



**Thank You for Your
Time and Attention**

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